

AMENDMENTS TO THE SPECIFICATION:

Kindly replace Paragraph [0002] with the following amended paragraph:

[0002] The present invention relates to a ~~drilling or~~ milling tool with a shank and a cutting part, the cutting part having cutting grooves running helically along its periphery and extending to the end face of the cutting part and also having, at its end face, cutting edges which are formed where the cutting-grooves intersect the end face of the tool, wherein the helix angle of the cutting grooves, measured relative to a plane containing the tool axis, is greater than the angle, measured at a corresponding plane, of the cutting faces adjoining the end-face cutting edges.

Kindly replace Paragraph [0003] with the following amended paragraph:

[0003] Corresponding ~~drilling or~~ milling tools have already been known for some time. In particular, ~~drills or~~ milling cutters which consist of particularly hard materials, such as e.g. cemented carbide, boron nitride, silicon nitride or mixtures of these, are to a greater or lesser extent in danger of breaking in the area of the end-face cutting edges. It is to be noted that some materials also unfortunately become increasingly more fragile as their hardness or wear resistance increases. Although a variety of manufacturing methods have already been successfully used in recent years to make suitable hard substances tougher so that they break less easily, these improvements are counteracted by increasing requirements with respect to the geometry of the cutting edges.

Kindly replace Paragraph [0004] with the following amended paragraph:

[0004] Thus, ~~drills or also~~ face milling cutters, which consist of a solid hard substance, such as e.g. tungsten carbide or one of the above-named hard materials, have now already been in existence for a relatively long time. In the case of corresponding tools which have helically-running grooves, the cutting angle of the end-face cutting edges is defined essentially by the helix angle of the cutting grooves. This is because the cutting edges are formed by the intersection between the cutting groove and the end face of the tool.

Kindly replace Paragraph [0005] with the following amended paragraph:

[0005] In the grinding process for the manufacture of such a ~~drilling or~~ milling tool which has a shank and an essentially cylindrical cutting part, the cutting grooves are ground helically into the cutting part with the help of a rotating abrasive disc, which is inclined to the axis of the tool, during relative axial movement between the abrasive disc and the tool and with a simultaneous rotation of the cutting piece about its axis. Alternatively, if cutting grooves have already been preformed during the manufacture or sintering, the cutting grooves are completed and reground by this grinding process.

Kindly replace Paragraph [0011] with the following amended paragraph:

[0011] Compared with this state of the art, the object of the present invention is to create a ~~drilling or~~ milling tool as well as a process for its manufacture, which has low cutting forces and nevertheless provides a large helix angle in order to produce a good material transport and

~~favourable~~ favorable cutting ratios.

Kindly replace Paragraph [0012] with the following amended paragraph:

[0012] As regards the initially mentioned ~~drilling or~~ milling tool, the object of the invention is achieved in that the cutting-face angle, starting from the end-face cutting edge, continuously changes into the helix angle of the cutting grooves.

Kindly delete Paragraph [0026] in its entirety.

Kindly replace Paragraph [0028] with the following amended paragraph:

[0028] In the front end view of the end face of the milling cutter according to FIG. 2, it can be seen that the milling cutter has four cutting grooves and four helical cutting edges 5 as well as four radial cutting edges 4 on the end face. The cutting edges 5 have a lateral cutting angle γ_0 formed between the wall of the respective groove and the plane P which intersects the cutting edge 5 (as shown in FIG. 2) and which is generally positive like the cutting angle of the secondary cutting edges 4.

Kindly replace Paragraph [0029] with the following amended paragraph:

[0029] The present invention relates above all to the design of the radial cutting edges 4 or to the cutting faces located at the cutting edges 4. This pattern is shown more precisely in FIGS. 3a-3c. FIG. 3a shows the lower section of the milling cutter represented in FIG. 1, wherein a chamfering 6 of the outer corner transitions between the end face and the peripheral surface of

the milling cutter. The chamfer 6 may have an axial extension shorter than an axial extension of a transition from the cutting-face angle to the helix angle. In FIGS. 3b and 3c, the lower end section of the main cutting edges 5, 5A is represented for two different embodiments respectively, in a view corresponding to the encircled area of FIG. 3a. As can be seen, the main cutting edge 5, 5A runs inclined to the axis 7 of the milling cutter at an angle δ_{p2} γ_{p2} which, as already mentioned, is designated the helix angle. If the main cutting edge 5, 5A ran in a continuous, unchanged pattern to the end face of the drill, this helix angle γ_{p2} would simultaneously also correspond to the cutting angle of the secondary cutting edge 4. However, as can be seen however in FIGS. 3b and 3c, the main cutting edge 5, 5A runs increasingly more steeply towards the end face of the milling cutter on a curved bend and in FIG. 3c the main cutting edge 5A actually attains a minimum (positive) value γ_{p0} . In the case of FIG. 3b, the main cutting edge 5 attains a minimum (negative) value γ_{p0} . In FIG. 3c, the transition from the helix angle γ_{p2} to the cutting angle γ_{p0} of the main cutting edge 5A runs along a constant radius R1. In the case of FIG. 3b, two transition radii R2 and R1 are provided, radius R1 at the lowest end of the main cutting edge 5 being smaller than radius R2.

Kindly replace the title of the invention with the following amended title:

~~DRILLING OR~~ MILLING TOOL AND PROCESS FOR ITS MANUFACTURE